

ATTORNEY DOCKET NO.: 05015.0302

PATENT  
Page 1 of 6

Form PTO-1449

U.S. DEPARTMENT OF COMMERCE (Rev. 7-80)  
PATENT AND TRADEMARK OFFICE

ATTORNEY DOCKET NO.: 05015.0302

SERIAL NO.: 09/583,120

APPLICANT: Bagrodia et al.

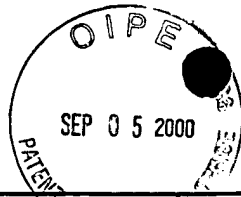
LIST OF PRIOR ART CITED BY APPLICANT  
(Use several sheets if necessary)

FILING DATE: May 30, 2000

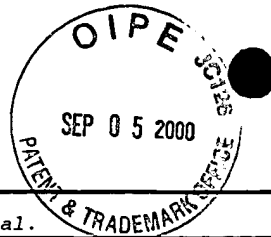
GROUP: 1714

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NO.	DATE	NAME	SUBCLASS	FILING DATE IF APPROPRIATE
KIWL	AA	6,050,509	04/18/00	Clarey et al.		
	AB	5,942,320	08/24/99	Miyake et al.		
	AC	5,882,751	03/16/99	Occhiello et al.		
	AD	5,830,544	11/03/98	Kerscher et al.		
	AE	5,807,630	09/15/98	Christie et al.		
	AF	5,780,376	07/14/98	Gonzales et al.		
	AG	5,747,560	05/05/98	Christiani et al.		
	AH	5,728,764	03/17/98	Bauer et al.		
	AI	5,665,454	09/09/97	Hosoi et al.		
	AJ	5,648,159	07/15/97	Sato		
	AK	5,620,774	04/15/97	Etchu et al.		
	AL	5,612,138	03/18/97	Kurz et al.		
	AM	5,578,672	11/26/96	Beall et al.		
	AN	5,552,469	09/03/96	Beall et al.		
	AO	5,530,052	06/25/96	Takekoshi et al.		
	AP	5,523,045	06/04/96	Kudert et al.		
	AQ	5,221,507	06/22/93	Beck et al.		
	AR	5,514,734	05/07/96	Maxfield et al.		
	AS	5,434,000	07/18/95	Konagaya et al.		
	AT	5,429,999	07/04/95	Naé et al.		
	AU	5,414,042	05/09/95	Yasue et al.		
	AV	5,385,776	01/31/95	Maxfield et al.		
	AW	5,382,650	01/17/95	Kasowski et al.		
	AX	5,374,306	12/20/94	Schlegel et al.		
	AY	5,340,884	08/23/94	Mills et al.		
	AZ	5,336,647	08/09/94	Naé et al.		
	BA	5,334,241	08/02/94	Jordan		
	BB	5,314,987	05/24/94	Kim et al.		
	BC	5,273,706	12/28/93	Laughner		
KIWL	BD	5,248,720	09/28/93	Deguchi et al.		



KLWL	BE	5,206,284	04/27/93	Fukui et al.		
	BF	5,164,460	11/17/92	Yano et al.		
	BG	5,164,440	11/17/92	Deguchi et al.		
	BH	5,153,061	10/06/92	Cavagna et al.		
	BI	5,153,062	10/06/92	Grolig et al.		
	BJ	5,149,485	09/22/92	Belcher		
	BK	5,110,501	05/05/92	Knudson Jr. et al.		
	BL	5,102,948	04/07/92	Deguchi et al.		
	BM	5,091,462	02/25/92	Fukui et al.		
	AN	5,037,285	08/06/91	Kudert et al.		
	BO	5,028,462	07/02/91	Matlack et al.		
	BP	4,994,313	02/19/91	Shimizu et al.		
	BQ	4,983,719	01/08/91	Fox et al.		
	AR	4,983,432	01/08/91	Bissot		
	BS	4,957,980	09/18/90	Kobayashi et al.		
	AT	4,946,365	08/07/90	Kudert et al.		
	BU	4,894,411	01/16/90	Okada et al.		
	BV	4,889,885	12/26/89	Usuki et al.		
	BW	4,810,734	03/07/89	Kawasumi et al.		
	BX	4,777,206	10/11/88	Rittler		
	BY	4,769,078	09/06/88	Tso		
	BZ	4,742,098	05/03/88	Finlayson et al.		
	CA	4,739,007	04/19/88	Okada et al.		
	CB	4,725,466	02/16/88	Crass et al.		
	CC	4,720,420	01/19/88	Crass, et al.		
	CD	4,680,208	07/14/87	Aoki et al.		
	CE	4,677,158	06/30/87	Tso et al.		
	CF	4,676,929	06/30/87	Rittler		
	CG	4,646,925	03/03/87	Nohara		
	CH	4,600,409	07/15/86	Campbell		
	CI	4,595,715	06/17/86	Kuze et al.		
	CJ	4,546,126	10/08/85	Breitenfellner et al.		
	CK	4,536,425	08/20/85	Hekal		
	CL	4,517,112	05/14/85	Mardis et al.		
	CM	4,482,695	11/13/84	Barbee et al.		
	CN	4,472,538	09/18/84	Kamigaito et al.		
	CO	4,450,095	05/22/84	Finlayson		
	CP	4,442,163	04/10/84	Kühner et al.		
	CQ	4,434,076	02/28/84	Mardis et al.		
KLWL	CR	4,434,075	02/28/84	Mardis et al.		

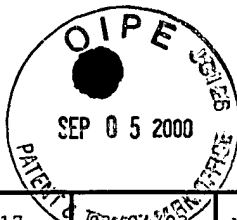


KWL	CS	4,429,079	01/31/84	Shibata et al.	
	CT	4,412,018	10/25/83	Finlayson et al.	
	CU	4,410,364	10/18/83	Finlayson et al.	
	CV	4,398,642	08/16/83	Okudaria et al.	
	CW	4,393,007	07/12/83	Priester et al.	
	CX	4,391,637	07/05/83	Mardis et al.	
	CY	4,239,826	12/16/80	Knott, II et al.	
	CZ	4,219,527	08/26/80	Edelman et al.	
	DA	4,208,218	06/17/80	Finlayson	
	DB	4,163,002	07/31/79	Pohl et al.	
	DC	4,161,578	07/17/79	Herron	
	DD	4,133,802	01/09/79	Hachiboshi et al.	
	DE	4,116,866	09/26/78	Finlayson	
	DF	4,105,578	08/08/78	Finlayson et al.	
	DG	4,081,496	03/28/78	Finlayson	
	DH	4,071,503	01/31/78	Thomas et al.	
	DI	4,064,112	12/20/77	Rothe et al.	
	DJ	4,018,746	04/19/77	Brinkmann et al.	
	DK	3,946,089	03/23/76	Furukawa et al.	
	DL	3,876,552	04/08/75	Moynihan	
	DM	3,843,479	10/22/74	Matsunami et al.	
	DN	3,823,169	07/09/74	Staub	
	DO	3,792,969	02/19/74	Gertisser	
	DP	3,700,398	10/24/72	Cole, Jr.	
	DQ	3,646,072	02/29/72	Shaw	
	DR	3,627,625	12/14/71	Jarrett	
	DS	3,544,523	12/01/70	Maxion	
	DT	3,514,498	05/26/70	Okazaki et al.	
	DU	3,499,916	03/10/70	Berthold	
	DV	3,391,164	07/02/68	Straley et al.	
	DW	3,281,434	10/25/66	Turetzky et al.	
	DX	3,232,934	02/01/66	Hoare	
	DY	3,125,586	03/17/64	Katz et al.	
	DZ	3,076,821	02/05/63	Hoare	
	EA	2,966,506	12/27/60	Jordan	
	EB	2,957,010	10/18/60	Straley et al.	
	EC	2,938,914	05/31/60	Joyce	
	ED	2,924,609	02/09/60	Joyce	
	EE	2,737,517	03/06/56	Boyd	
KWL	EF	2,531,427	11/28/50	Hauser	



## FOREIGN PATENT DOCUMENTS

KWL	EG	EP 940430	09/08/99	Yoshikawa et al. (Europe)		
	EH	WO 99/41299	08/19/99	Goettler et al. (PCT)		
	EI	WO 99/02593	01/21/99	Barbee et al. (PCT)		
	EJ	WO 98/53000	11/26/98	Li et al. (PCT)		
	EK	WO 98/29499	07/09/98	Matayabas et al. (PCT)		
	EL	JP 10168305	06/23/98	Toyota Chuo Kenkyusho KK (Japan) (abstract)		
	EM	EP 0846723	06/10/98	Serrano et al. (Europe)		
	EN	JP 10133013	05/22/98	Sony Corp. (Japan) (abstract)		
	EO	JP 10077427	03/24/98	Sony Corp. (Japan) (abstract)		
	EP	WO 98/01346	01/15/98	Frisk (PCT)		
	EQ	WO 97/44384	11/27/97	Branch (PCT)		
	ER	WO 97/31973	09/04/97	Kobayashi et al. (PCT)		
	ES	WO 97/31057	08/28/97	Nichols et al. (PCT)		
	ET	WO 97/30950	08/28/97	Gonzales et al. (PCT)		
	EU	JP 9217012	08/19/97	Asahi Kasei Kogyo KK (Japan) (abstract)		
	EV	JP 9176461	07/08/97	Yasue (Japan)		
	EW	EP 780340	06/25/97	Beall et al. (Europe)		
	EX	WO 97/17398	05/15/97	Farrow et al. (PCT)		
	EY	EP 0761739	03/12/97	Sakaya et al. (Europe)		
	EZ	JP 09048908	02/18/97	Oome et al. (Japan) (abstract)		
	FA	EP 747451	12/11/96	Beall et al. (Europe)		
	FB	EP 681990	11/15/96	Naé et al. (Europe)		
	FC	WO 96/25458	08/22/96	Haman (PCT)		
	FD	WO 96/08526	03/21/96	Giannelis et al. (PCT)		
	FE	EP 0691376	01/10/96	Kotani et al. (Europe)		
	FF	EP 0691212	01/10/96	Kung et al. (Europe)		
	FG	WO 95/14733	06/01/95	Vaia et al. (PCT)		
	FH	EP 650994	05/03/95	Kim et al. (Europe)		
	FI	WO 95/06090	03/02/95	Maxfield et al. (PCT)		
	FJ	JP 7026123	01/27/95	Okamoto et al. (Japan) (abstract)		
	FK	WO 94/29378	12/22/94	Mills et al. (PCT)		
	FL	WO 94/11430	05/26/94	Maxfield et al. (PCT)		
	FM	EP 0590263	04/06/94	Kotani et al. (Europe)		
	FN	WO 93/14922	08/05/93	Dalgewicz et al. (PCT)		
	FO	WO 93/11190	06/10/93	Maxfield et al. (PCT)		
	FP	EP 542266	05/19/93	Naé et al. (Europe)		
	FQ	WO 93/04125	03/04/93	Curry et al. (PCT)		
KWL	FR	WO 93/04118	03/04/93	Maxfield et al. (PCT)		



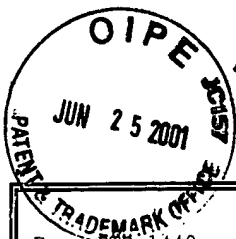
KIWL	FS	WO 93/04117	03/04/93	Maxfield et al. (PCT)	
	FT	EP 459472	12/04/91	Yano et al. (Europe)	
	FU	EP 398551	11/22/90	Deguchi et al. (Europe)	
	FV	EP 295336	12/21/88	Rees (Europe)	
	FW	DE 3808623	10/06/88	Fujimoto et al. (Germany) (abstract)	
	FX	DE 3806548	09/15/88	Usuki et al. (Germany) (abstract)	
	FY	EP 278403	08/17/88	Senzo et al. (Europe)	
	FZ	EP 261430	03/30/88	Katoh et al. (Europe)	
	GA	JP 62073943	04/04/87	Kuratsuji et al. (Japan) (abstract)	
	GB	EP 0202532	11/26/86	Crass et al. (Europe) (abstract)	
	GC	EP 186456	07/02/86	Takahashi (Europe)	
	GD	WO 84/03096	08/16/84	Knudson et al. (PCT)	
	GE	GB 2123014	01/25/84	Goedde et al. (United Kingdom)	
	GF	JP 76029697	03/09/76	Japan Metallurgical Ind (Japan) (abstract)	
	GG	JP 75010196	04/18/75	Japan (abstract)	
	GH	JP 75005751	03/06/75	Toyo Boseki KK (Japan) (abstract)	
	GI	JP 75005735	03/06/75	Japan (abstract)	
	GJ	JP 75001156	01/16/75	Toyo Boseki KK (Japan) (abstract)	
KIWL	GK	GB 1090036	11/08/67	Jarrett (United Kingdom)	

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

KIWL	GL	LeBaron et al., "Polymer-layered silicate nanocomposites: an overview," <i>App. Clay Sci.</i> , <u>15</u> , 11-29 (1999)
	GM	Ke et al., "Crystallization, Properties, and Crystal and Nanoscale Morphology of PET-Clay Nanocomposites," <i>J. Appl. Polym. Sci.</i> , <u>71</u> , 1139-1146 (1999)
	GN	Kawasumi et al., "Preparation and Mechanical Properties of Polypropylene-Clay Hybrids," <i>Macromolecules</i> , <u>30</u> , 6333-6338 (1997)
	GO	Usuki et al., "Synthesis of Propylene-Clay Hybrid", <i>J. Appl. Polym. Sci.</i> , <u>63</u> , 137-139 (1997)
	GP	Giannelis, "Polymer Layered Silicate Nanocomposites," <i>Advanced Materials</i> , <u>8</u> , 29-35 (1996)
	GQ	Kurowaka et al., "Preparation of a nanocomposite of polypropylene and smectite," <i>J. Materials Science Letters</i> , <u>15</u> , 1481-1483 (1996)
	GR	Oriakhi et al., "Incorporation of poly(acrylic acid), poly(vinylsulfonate) and poly(styrenesulfonate) within layered double hydroxides," <i>J. Mater. Chem.</i> , <u>6</u> , 103-107 (1996)
	GS	Messersmith et al., "Syntheses and Barrier Properties of Poly( $\epsilon$ -Caprolactone)-Layered Silicate Nanocomposites," <i>J. of Polym. Sci.</i> , <u>33</u> , 1047-1057 (1995)
	GT	Pinnavaia et al., "Clay-Reinforced Epoxy Nanocomposites," <i>Chem. Mater.</i> , <u>6</u> , 2216-2219 (1994)
	GU	Sugahara et al., "Clay-Organic Nano-Composite; Preparation of a Kaolinite - Poly(vinylpyrrolidone) intercalation Compound," <i>J. Ceramic Society of Japan</i> , <u>100</u> , 413-416 (1992)
	GV	Yano et al., "Synthesis and properties of polyimide-clay hybrid," <i>ACS, Polymer Preprints</i> , <u>32</u> , 65-66, (1991)
	GW	Fukushima et al., "Swelling Behavior of Montmorillonite by Poly-6-Amide," <i>Clay Minerals</i> , <u>23</u> , 27-34 (1988)
	GX	Verbicky, <i>Encyclopedia of Polymer Science and Engineering</i> , 2nd Edition, <u>12</u> , 364-383 (1988)
KIWL	GY	Fukushima et al., "Synthesis of an Intercalated Compound of Montmorillonite and 6-Polyamide," <i>J. Inclusion Phenomena</i> , <u>5</u> , 473-482, (1987)

KWL	GZ	Okada et al., "Synthesis and Characterization of a Nylon 6-Clay Hybrid," ACS, Polymer Preprints, 28, 447-448, (1987)
	HA	Fahn et al., "Reaction Products of Organic Dye Molecules with Acid-Treated Montmorillonite," Clay Minerals, 18, 447-458 (1983)
	HB	Greenland, "Adsorption of Polyvinyl Alcohols by Montmorillonite," J. Colloid Sci., 18, 647-664 (1963)
	HC	MSDS - Polyvinyl Alcohol
KWL	HD	MSDS - Clay (Montmorillonite)
EXAMINER: <i>Katharine W. Lee</i>		DATE CONSIDERED: <i>October 17, 2001</i>
EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.		





Form PTO-1449

U.S. DEPARTMENT OF COMMERCE (Rev. 7-80)  
PATENT AND TRADEMARK OFFICE

LIST OF PRIOR ART CITED BY APPLICANT  
(Use several sheets if necessary)

ATTORNEY DOCKET NO.: 05015.0302

SERIAL NO.: 09/583,120

APPLICANT: Bagrodia, et al.

FILING DATE: May 30, 2000

GROUP: 1713

RECEIVED  
JUN 26 2001  
TOPTOP

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
KIWL	A1	6,232,388	05/15/01	Lan, et al.			03/19/99 08/17/98
	A2	6,162,857	12/19/00	Trexler, et al.			12/22/97
	A3	6,120,860	09/19/00	Bowen, et al.			11/25/96
	A4	6,117,541	09/12/00	Frisk, et al.			07/02/97
	A5	6,084,019	07/04/00	Matayabas, Jr. et al.			12/22/97
	A6	6,071,988	06/06/00	Barbee, et al.			12/22/97
	A7	6,057,396	05/02/00	Lan, et al.			08/11/97
	A8	6,060,549	05/09/00	Li, et al.			05/20/97
	A9	6,036,765	03/14/00	Farrow, et al.			04/01/98
	A10	6,034,163	03/07/00	Barbee, et al.			12/22/97
	A11	6,017,632	01/25/00	Pinnavaia, et al.			08/20/98
	A12	5,993,769	11/30/99	Pinnavaia, et al.			05/14/98
	A13	5,952,093	09/14/00	Nichols, et al.			02/20/97
KIWL	A14	5,660,761	08/26/97	Katsumoto, et al.			02/15/95

FOREIGN PATENT DOCUMENTS

KIWL	A15	WO 99/15432	04/01/99	PCT			
	A16	EP 0909787	04/21/99	Europe			
	A17	EP 0822163	02/04/98	Europe			
KIWL	A18	JP 10001608	01/06/98	Japan			

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER:

Katsumoto W. Lee

DATE CONSIDERED:

Oct. 17/2001

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.